



# SFO Consumer Confidence Report 2015

## CONSERVATION ALERT:

California is in a drought. The recent rains have not been enough to recover from some of the driest seasons on record. Water is our shared and precious resource. In 2015, SFO reduced our water usage by 13.5%. In the coming year, SFO will strive to continue to reduce water consumption from current levels. Please do your part to help.

### Our Drinking Water Sources and Treatment

Supplied by the San Francisco Regional Water System (SFRWS), which is owned and operated by the San Francisco Public Utilities Commission (SFPUC), our major water source originates from spring snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The pristine, well protected Sierra water source is exempt from filtration requirements by the United States Environmental Protection Agency (USEPA) and State Water Resources Control Board's Division of Drinking Water (SWRCB). Water treatment provided by the SFRWS, including disinfection by ultraviolet light and chlorine, corrosion control by adjustment of the water pH value, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual and minimizing disinfection byproduct formation, is in place to meet the drinking water regulatory requirements.

The Hetch Hetchy water is supplemented with surface water from two local watersheds. Rainfall and runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are collected in the Calaveras and San Antonio reservoirs, and delivered to the Sunol Valley Water Treatment Plant (SVWTP). Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in the Crystal Springs, San Andreas, and Pilarcitos reservoirs, and delivered to the Harry Tracy Water Treatment Plant. Beginning in 2015, the SWRCB

approved the SFRWS to use surface water collected in Lake Eleanor, Lake Cherry, Early Intake Reservoir and conveyed via the Lower Cherry Aqueduct, and the associated creeks (collectively known as Upcountry Non-Hetch Hetchy Sources, or UNHHS) as an additional drinking water source. The UNHHS water will be treated at the SVWTP prior to service to customers. Water at the two treatment plants is subject to filtration, disinfection, fluoridation, and pH adjustment for corrosion control optimization.

As in the past, the Hetch Hetchy Watershed provided the majority of our total water supply, with the remainder contributed by the two local watersheds in 2015.

### Protecting Our Watersheds

The SFPUC conducts watershed sanitary survey for Hetch Hetchy source annually and local water sources every five years. The latest 5-year local sanitary survey was done in 2010. In 2015, a special watershed sanitary survey for the upcountry water sources including Cherry Creek, Eleanor Creek, and Lower Cherry Aqueduct was completed as part of the SFPUC's drought response plan efforts. These surveys evaluate the sanitary condition, water quality, potential contamination sources, and the results of watershed management activities, and were completed with support from partner agencies including the National Park Service and US Forest Service.

These surveys have identified wildlife, stock, and human activities as potential contamination sources. The reports are available for review at the San Francisco District office of SWRCB (contact phone number: 510-620-3474).

## Water Quality

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure the water delivered to you meets or exceeds federal and state drinking water standards. In 2015, WQD staff conducted more than 47,500 drinking water tests in the transmission and distribution systems. This is in addition to the extensive treatment process control monitoring performed by our certified operators and online instruments.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, the USEPA and SWRCB prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

## Contaminants and Regulations

The sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Such substances are called contaminants, and may be present in source water as:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production, and mining activities.

**More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (800) 426-4791.**

## Reducing Lead from Plumbing Fixtures

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in the SFRWS. We are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. It is possible that lead levels at your home may be higher than at others because of plumbing materials used in your property.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead levels in your water, you may wish to have your water tested. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the USEPA's Safe Drinking Water Hotline **(800) 426-4791**, or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Special Health Needs

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline **(800) 426-4791** or at [www.epa.gov/safewater](http://www.epa.gov/safewater).

## Fluoridation and Dental Fluorosis

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. The SFPUC's fluoride

target level in the water is 0.7 milligram per liter, consistent with the May 2015 State regulatory guidance on the new optimal fluoride level. Infants fed formula mixed with water containing fluoride at this level may still have a chance of developing tiny white lines or streaks in their teeth. These marks are referred to as mild to very mild fluorosis, and are often only visible under a microscope. Even in cases where the marks are visible, they do not pose any health risk. CDC considers it safe to use optimally fluoridated water for preparing infant formula. To lessen this chance of dental fluorosis, you may choose to use low-fluoride bottled water to prepare infant formula. Nevertheless, children may still develop dental fluorosis due to fluoride intake from other sources such as food, toothpaste and dental products.

Contact your health provider or SWRCB if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the SWRCB website [www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/Fluoridation.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml), and search for fluoride, or the CDC website [www.cdc.gov/fluoridation](http://www.cdc.gov/fluoridation).

## Bay Tunnel & New Irvington Tunnel Projects

These new SFPUC's facilities were brought into service in 2015 and have strengthened the seismic reliability of the SFRWS by providing crucial system redundancies. They are part of the SFPUC's Water System Improvement Program, a 4.8 billion dollar investment in capital projects that strengthen our ability to provide reliable, high-quality water to 2.6 million customers, even after a natural disaster.

## Key Water Quality Terms

Following are definitions of key terms referring to water quality standards and goals noted on the adjacent data table.

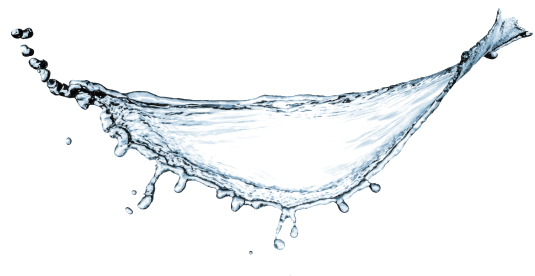
- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.
- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking

water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- **Regulatory Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **Turbidity:** A water clarity indicator that measures cloudiness of the water, and is also used to indicate the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants.
- **Cryptosporidium** is a parasitic microbe found in most surface water. The SFPUC regularly tests for this waterborne pathogen, and found it at very low levels in source water and treated water in 2015. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of Cryptosporidium may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

## Wholesale Agency's Water Quality Data for Year 2015

The table on the following page lists all 2015 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accord with regulatory guidance. The SFPUC holds a SWRCB monitoring waiver for some contaminants and therefore their monitoring frequencies are less than annual.



Detected Contaminants	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
<b>Turbidity</b>						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.2 - 0.5 <sup>(1)</sup>	[3.1]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU -	Min 95% of samples <sup>(2)</sup> ≤ 0.3 NTU	N/A N/A	- 97% - 100%	[1] -	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU -	Min 95% of samples <sup>(2)</sup> ≤ 0.3 NTU	N/A N/A	- 100%	[0.14] -	Soil runoff
<b>Disinfection Byproducts and Precursor</b>						
Total Trihalomethanes	ppb	80	N/A	<b>&lt;0.5-54.4</b>	<b>27<sup>(3)</sup></b>	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	<b>&lt;2-33.5</b>	<b>23<sup>(3)</sup></b>	Byproduct of drinking water disinfection
Total Organic Carbon <sup>(4)</sup>	ppm	TT	N/A	1.4 - 5.2	2.1	Various natural and man-made sources
<b>Microbiological</b>						
Total Coliform	%	"NoP ≤ 5.0% of monthly samples"	(0)	<b>0-4.11</b>	<b>0.69</b>	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	0 - 0.08	0.01	Naturally present in the environment
<b>Inorganics</b>						
Fluoride (source water) <sup>(5)</sup>	ppm	2.0	1	ND - 0.8	0.3 <sup>(6)</sup>	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	<b>1.85-3.55</b>	<b>2.63<sup>(7)</sup></b>	Drinking water disinfectant added for treatment
<b>Constituents with Secondary Standards</b>	<b>Unit</b>	<b>SMCL</b>	<b>PHG</b>	<b>Range</b>	<b>Average</b>	<b>Major Sources of Contaminant</b>
Chloride	ppm	500	N/A	<3 - 16	8.4	Runoff/leaching from natural deposits
Color	Unit	14	N/A	<5 - 5	<5	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	34 - 213	144	Substances that form ions when in water
Sulfate	ppm	500	N/A	1.2 - 30	14	Runoff/leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 93	54	Runoff/leaching from natural deposits
Turbidity	NTU	5	N/A	0.1 - 0.3	0.1	Soil runoff
<b>Lead and Copper</b>	<b>Unit</b>	<b>AL</b>	<b>PHG</b>	<b>Range</b>	<b>90<sup>th</sup> Percentile</b>	<b>Major Sources in Drinking Water</b>
Copper <sup>(8)</sup>	ppb	1300	300	<b>10.7 - 184.6</b>	<b>71.5</b>	Internal corrosion of household water plumbing systems
Lead <sup>(9)</sup>	ppb	15	0.2	<b>&lt;1 - 4.1</b>	<b>2.2</b>	Internal corrosion of household water plumbing systems

Other Water Quality Parameters	Unit	ORL	Range	Average
Alkalinity (as CaCO <sub>3</sub> )	ppm	N/A	7 - 128	30
Boron	ppb	1000 (NL)	103	103
Bromide <sup>(10)</sup>	ppb	N/A	15 - 24	20
Calcium (as Ca)	ppm	N/A	3 - 18	11
Chlorate <sup>(11)</sup>	ppb	800 (NL)	39 - 280	157
Hardness (as CaCO <sub>3</sub> )	ppm	N/A	13 - 65	42
Magnesium	ppm	N/A	0.2 - 5.6	3.7
pH	-	N/A	7.1 - 9.9	9.0
Potassium	ppm	N/A	0.2 - 0.9	0.6
Silica	ppm	N/A	3.7 - 5.4	4.7
Sodium	ppm	N/A	2.9 - 19	13

Key:			
< / ≤	less than / less than or equal to	NoP	Number of Coliform-Positive Sample
AL	Action Level	NTU	Nephelometric Turbidity Unit
Max	Maximum	ORL	Other Regulatory Level
Min	Minimum	ppb	part per billion
N/A	Not Available	ppm	part per million
ND	Non-Detect	µS/cm	microSiemens/centimeter
NL	Notification Level		

#### Footnotes

- (1) These are monthly average turbidity values measured every 4 hours daily.
- (2) There is no turbidity MCL for filtered water. The limits are based on the TT requirements for filtration systems.
- (3) This is the highest locational running annual average value.
- (4) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.
- (5) In May 2015, the SWRCB recommends a fluoride level in the treated water be maintained at 0.7 ppm. In 2015, the range and average of the fluoride levels were 0.6 ppm - 1.0 ppm and 0.8 ppm, respectively.
- (6) The natural fluoride levels in the upcountry source were ND. Elevated fluoride levels in the SVWTP and HTWTP raw water are attributed to the transfer of fluoridated Hetch Hetchy water into the local reservoirs.
- (7) This is the highest running annual average value.
- (8) The most recent Lead and Copper Rule monitoring was in 2013. **0** of **34** site samples collected at consumer taps had copper concentrations above the AL. (Use only if necessary)
- (9) The most recent Lead and Copper Rule monitoring was in 2013. **0** of **34** site samples collected at consumer taps had lead concentrations above the AL. (Use only if necessary)
- (10) Bromide was detected in HTWTP effluent only. If you do not receive HTWTP water in 2015, you may exclude this contaminant from this table.
- (11) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFPUC for water disinfection.

**Note: Additional water quality data may be obtained by Design and Construction at (650) 821-7843.**